ezTCP Utility

ModMap User's Manual

Version 1.5

Sollae Systems Co., Ltd.

http://www.ezTCP.com

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1 Overview

1.1 What is ModMap

The ModMap is a management program for I/O controllers of Sollae Systems. It provides the easiest way of managing many I/O controllers at the same time. The ModMap is for the following products.

Name	Type	Number of Port(s)		
		Digital Input	Digital Output	Analog Input
CIE-H10	External	8	8	0
CIE-M10	Module	8	8	1
CIE-H14	External	4	4	0
CIE-H12	External	2	1	0
EZI-10	External	1	1	0

Table 1-1 I/O Controllers

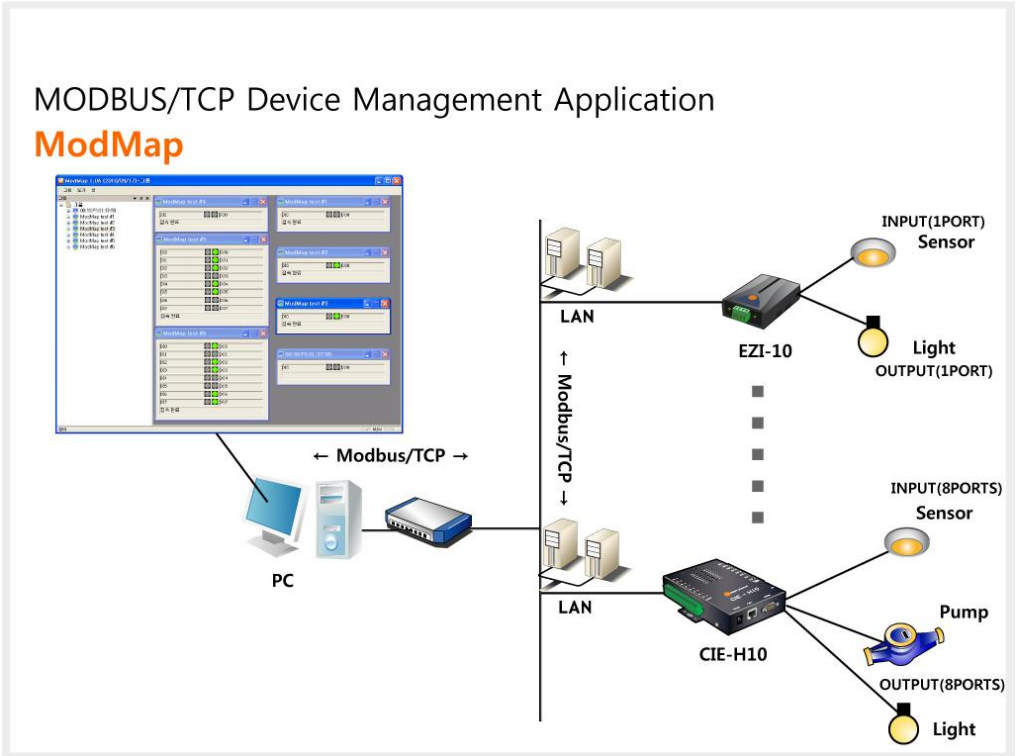


Figure 1-1 Overview

- Notices

① The ModMap uses Modbus/TCP protocol but it doesn't supports HTTP protocol.

② The ModMap works as a Modbus/TCP master.

③ The ModMap has been tested with Windows 2000, Windows Server 2003, Windows Server 2008, Windows XP, Windows Vista and Windows 7.

☞ **The CIE-H10, CIE-M10, CIE-H12, CIE-H14 and EZI-10 should be set up to use Modbus/TCP protocol and work as a Modbus/TCP slave.**

- ModMap

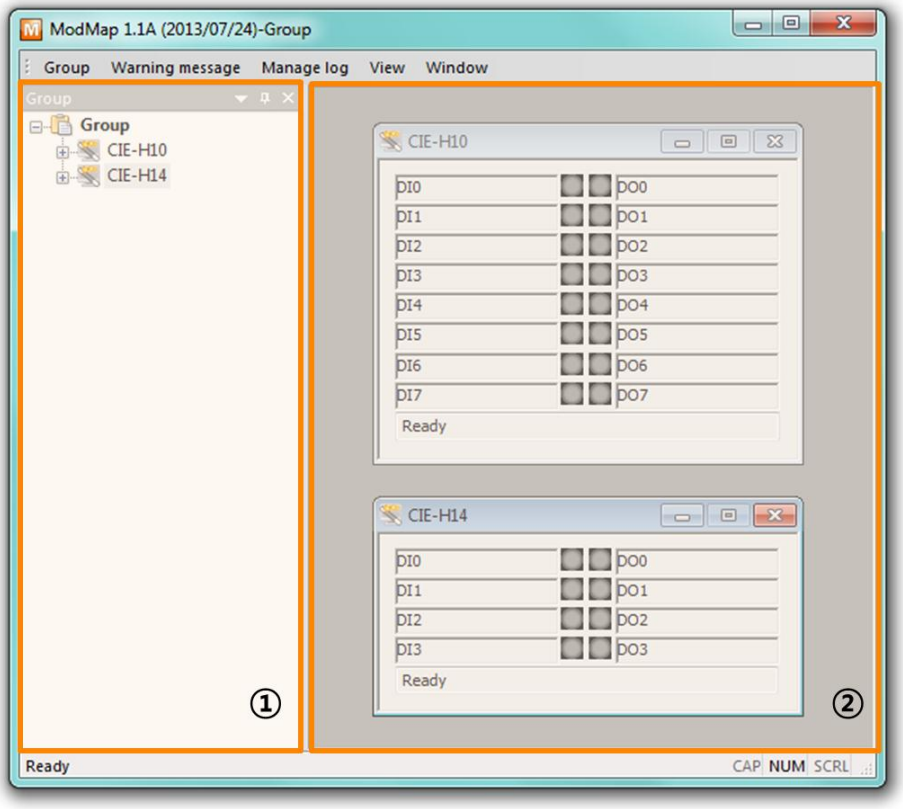


Figure 1-2 Screen shot of the ModMap

① Tree region

☞ The tree region shows all registered groups and I/O controllers.

☞ You can divide I/O controllers into several groups.

☞ Each group can have I/O controllers up to 30.

② Control window region

☞ The control window region shows windows in which you can control and monitor input and output ports of I/O controllers.

2 How to use the ModMap

2.1 Adding I/O controllers

2.1.1 Ways of adding I/O controllers

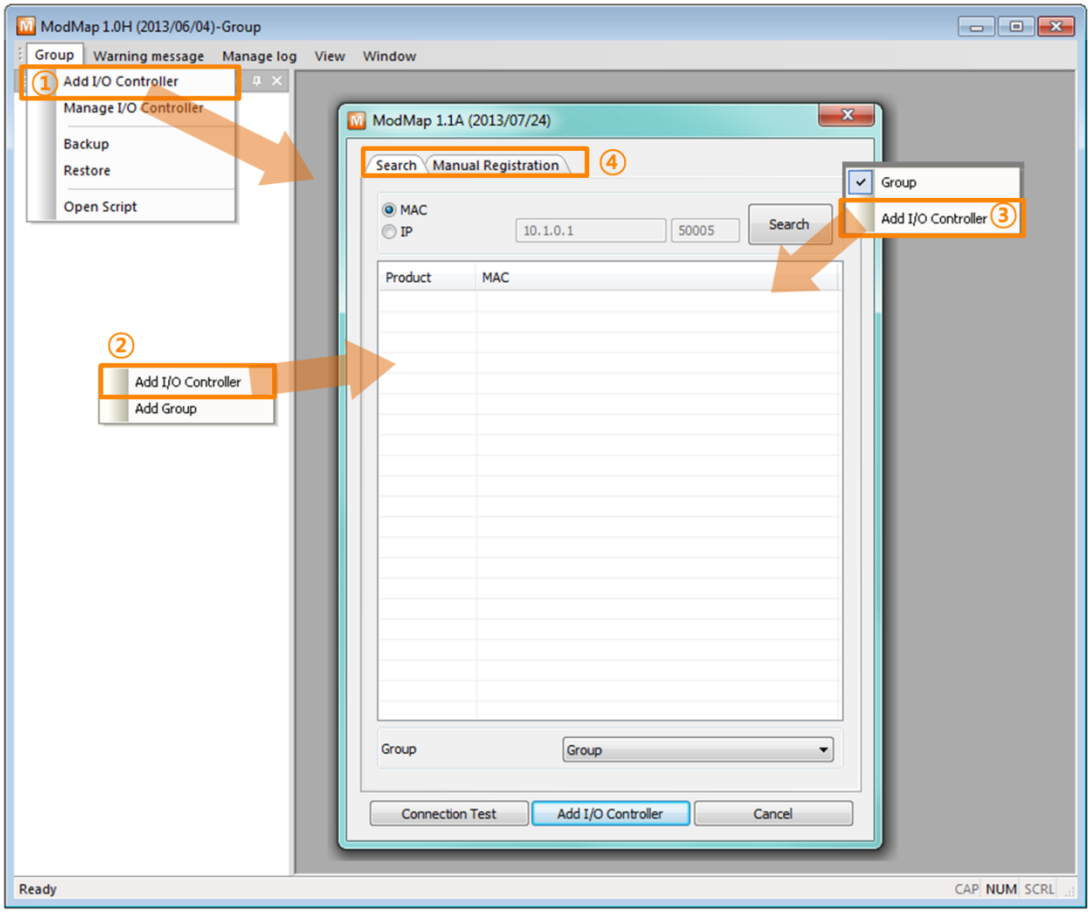


Figure 2-1 Adding I/O controllers

① Select the "Add I/O Controller" menu.

② Create the pop-up menu in the tree region and select the "Add I/O Controller" menu.

③ Create the pop-up menu in the control window region and select the "Add I/O Controller" menu.

④ Select the "Search" or the "Manual Registration" tab for adding I/O controllers.

2.1.2 Search tab

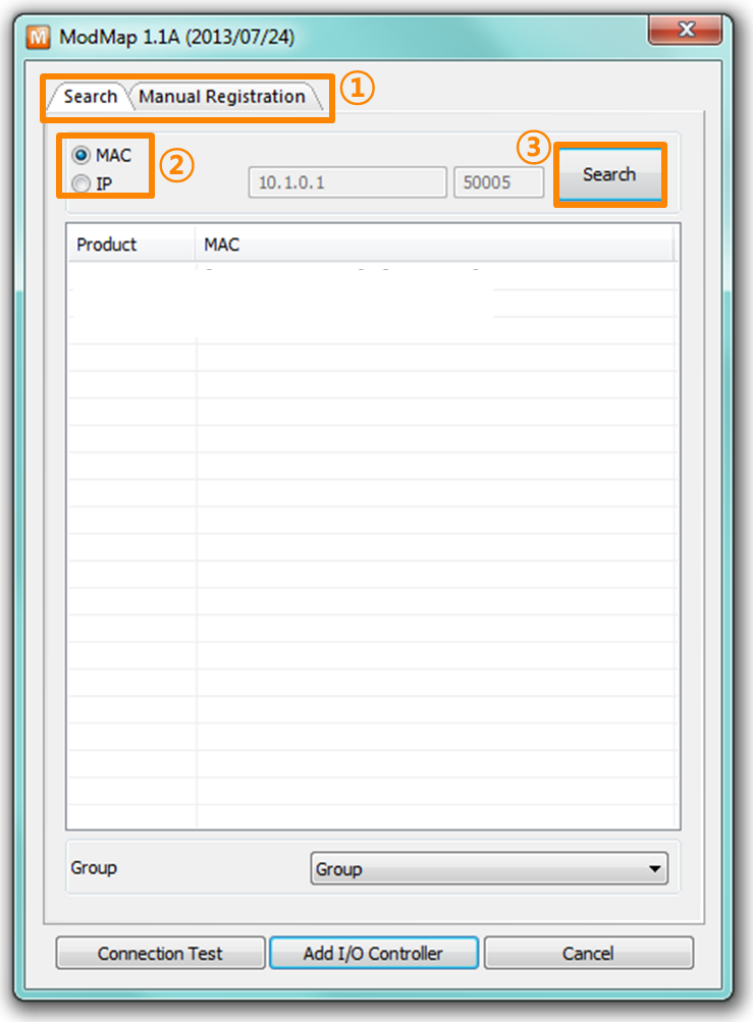


Figure 2-2 Search I/O controllers

① Click the "Search" tab.

② Select a searching method.

☞ MAC

This method can search I/O controllers from local network.

☞ IP

This method can search a specific I/O controller by using an IP address or the host name.

③ Click the "Search" button.

If you click the "Search" button then the ModMap starts to search I/O controllers by using the selected method. The ModMap lists searched I/O controllers' MAC address, comment and IP address.

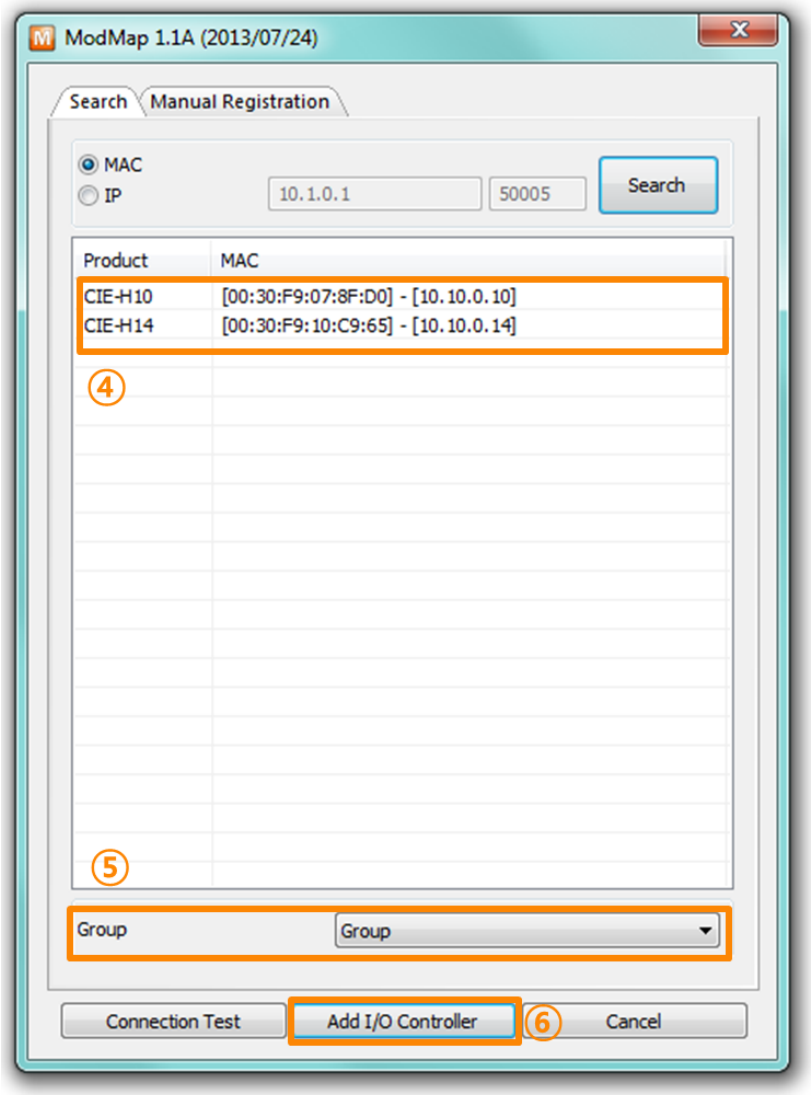


Figure 2-3 Adding I/O controllers

④ Select I/O controllers from the list.
If you want to select multiple I/O controllers then press "Ctrl" key before select I/O controllers on the list.

⑤ Select a group.

⑥ Click the "Add I/O Controller" button.

2.1.3 Manual registration tab

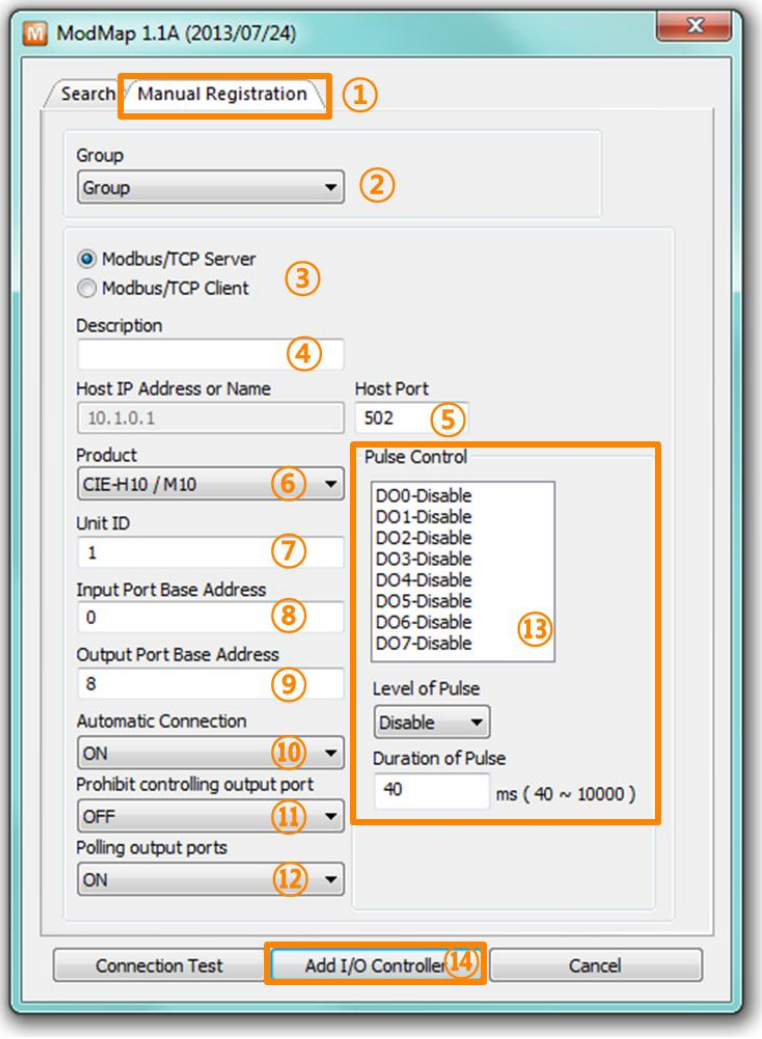


Figure 2-4 Manual registration

① Click the "Manual Registration" tab.

② Select a group.

③ Select the "Modbus/TCP Server" or the "Modbus/TCP Client".

You can choose it according to I/O controllers' communication mode.

Communication Mode	Option
Passive	Modbus/TCP Client
Active	Modbus/TCP Server

Table 2-1 How to select the option

④ Enter a brief description about I/O controllers.

⑤ Host IP Address or Name

☞ In case of the "Modbus/TCP Client"

You have to enter the "Host IP Address or Name" and the "Host Port" to make a TCP/IP connection.

☞ In case of the "Modbus/TCP Server"

You have to enter the "Host Port" to wait a request of TCP/IP connection from I/O controllers.

⑥ Select the "Product". Available products are as follows.

Name	Type	Number of Port(s)		
		Digital Input	Digital Output	Analog Input
CIE-H10	External	8	8	0
CIE-M10	Module	8	8	1
CIE-H14	External	4	4	0
CIE-H12	External	2	1	0
EZI-10	External	1	1	0

Table 2-2 available products

⑦ Enter unit id.

⑧ Enter input port base address.

⑨ Enter output port base address.

⑩ Select the "Automatic Connection"

If you set this option to "ON" then the ModMap automatically tries to make a Modbus/TCP connection when it starts up.

⑪ Select the "Prohibit controlling output port"

If you set this option to "ON" then you can't use output port led icons on the control window. (**Refer to 2.2 Control window**)

⑫ Select the "Polling output ports"

If you set this option to "ON" then the ModMap try to read output ports status of I/O controllers every 1 second.

⑬ Set the pulse output to the output ports.

You can give the pulse output of the controllers.

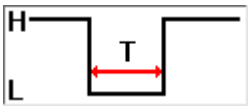
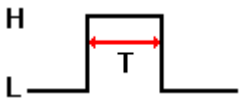
Level	Duration	Description
LOW	40ms ~ 10,000ms	 - Change the level "HIGH" to "LOW" only during the time of "Duration of Pulse." - **"HIGH" level state is required.**
HIGH	40ms ~ 10,000ms	 - Change the level "LOW" to "HIGH" only during the time of "Duration of Pulse." - **"LOW" level state is required**

Table 2-3 Pulse Control

⑭ Click the "Add I/O Controller" button.

2.1.4 Tree and control window

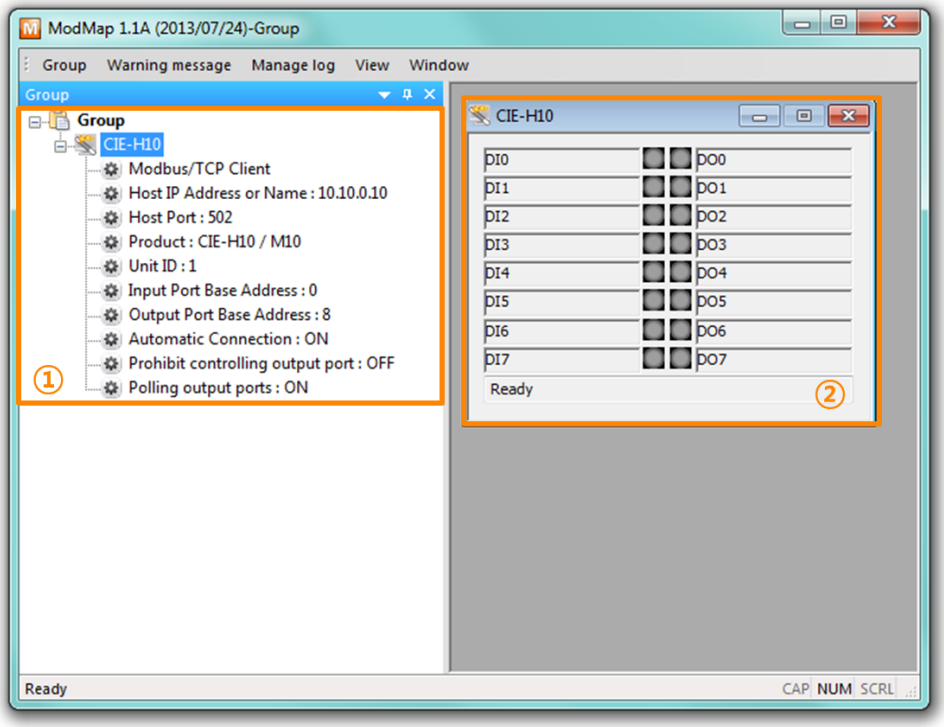


Figure 2-5 Tree and control window

When an I/O controller is added, its information is displayed on the tree(①) and the control window(②) is shown.

2.2 Control window

2.2.1 Pop-up menu

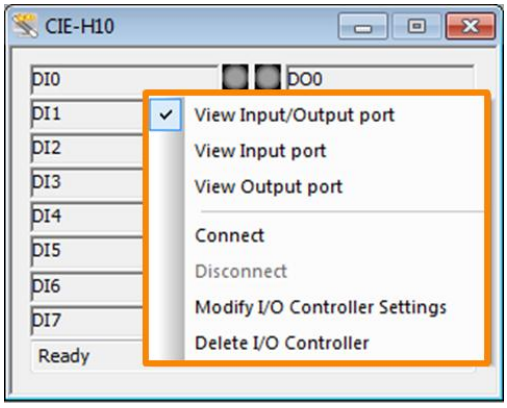


Figure 2-6 Pop-up menu

In order to crate pop-up menu, click the right mouse button on the control window.

- View Input/Output port, View Input Port and View Output Port

  You can select one of the below three types.

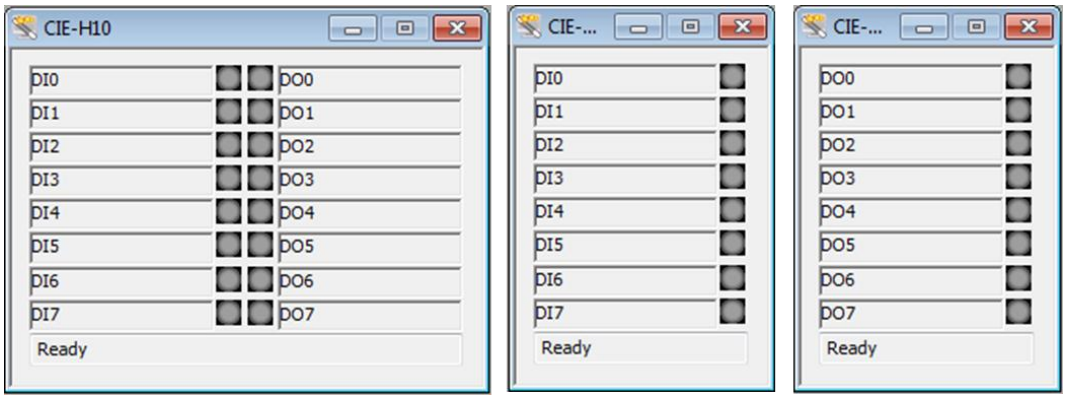


Figure 2-7 View Input/Output port, View Input Port and View Output Port

- Connect / Disconnect

  You can make or close a TCP/IP connection. Status of the connection is indicated by ICONs.

ICON	Description
	Ready.
	Ready. It shows the "Automatic Connection" option is activated.
	In case of the "Modbus/TCP Client" Trying to make a TCP/IP connection. *In case of the "Modbus/TCP Server"* Waiting a TCP/IP connection request.
	A TCP/IP connection is established.
	Error occurred : You can see the description about the error with message box.

Table 2-4 Type of ICONs

- Modify I/O Controller Settings

  You can modify settings of I/O controllers. Refer to "**2.1.3 Manual registration tab**" and "**2.4 Modification of I/O controllers' settings**". You can't use this menu when the status of connection is (trying or waiting) or (established).

- Delete I/O Controller

  You can delete an I/O controller.

2.2.2 Brief description of input/output ports

The edit boxes are on the control window. You can modify the text of each port. Default values of the input boxes are DI0 ~ DI7 and the output boxes are DO0 ~ DO7.

- How to edit a brief description

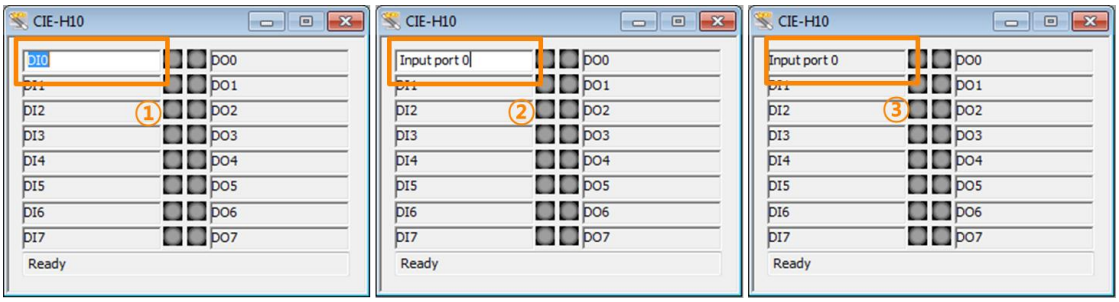


Figure 2-8 How to edit a brief description

① If you click one of the disabled edit boxes then it will be enabled.
② Edit the brief description of the port.
③ Check if the description is correct..

2.2.3 Controlling and monitoring input / output ports

On the control window LED icons are shown, representing status of the port. You can control and monitor the ports with the icons.

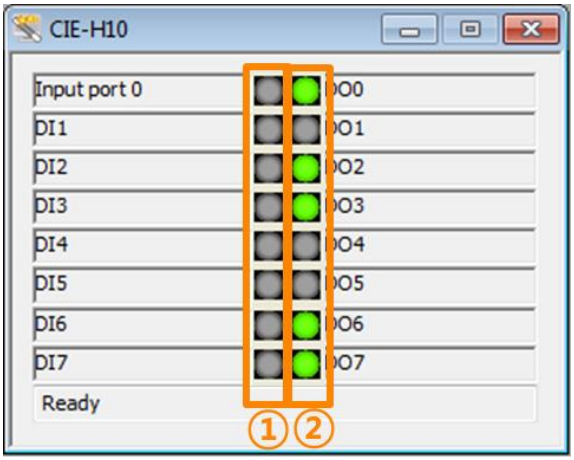


Figure 2-9 Controlling and monitoring input/output ports

☞ **Controlling or monitoring is possible only if the status of TCP/IP connection is "ESTABLISHED( )"**

- How to control and monitor I/O ports

① When you click one of the icons on the left(①) the ModMap reads input ports status from selected I/O controller.

② When you click one of the icons on the right(②) the ModMap changes the output port status of the I/O controller.

ICON	Description
	Input port: The digital signal is detected. Output port: The output port switch is turned on.
	Input port: The digital signal is not detected. Output port: The output port switch is turned off.
	Output port: The "Prohibit controlling output port" option is ON.
	Output port: The "2.9 Warning message" option is ON.

Table 2-5 Status of I/O ports

☞ **You CAN'T change status of the output ports when the "Prohibit controlling output port" option is ON.**

☞ **If the "Warning message" option is ON, a warning message is showing before changing output ports status.**

2.3 Tree

2.3.1 Modification of I/O controllers' settings

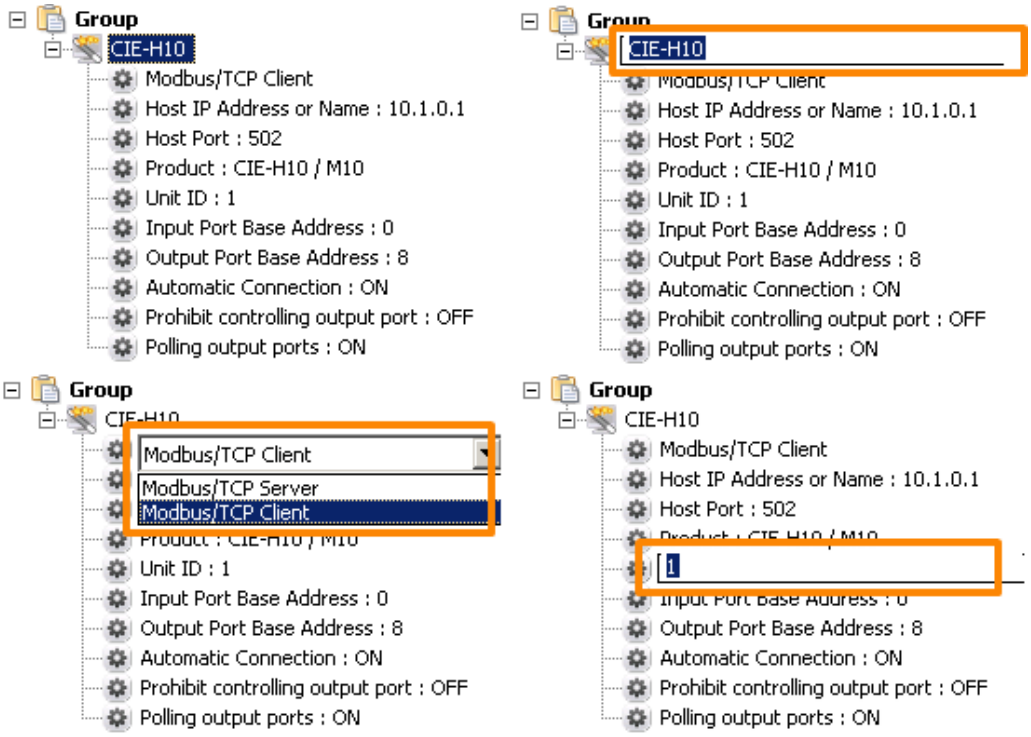


Figure 2-10 Modification of I/O controllers' settings

- How to modify the settings

① Select an item which you want to change. Then click the item one more time or press the "F2" key.

② When an edit box or a combo box appears you can change the value.

☞ The "Modbus/TCP Server or Modbus/TCP Client", "Host IP Address or Name", "Host Port", "Number of Input/Output ports", "Unit ID", "Input Port Base Address" and "Output Port Base Address" are not allowed to be modified when status of the TCP/IP connection is "ESTABLISHED( )".

2.3.2 Pop-up menu

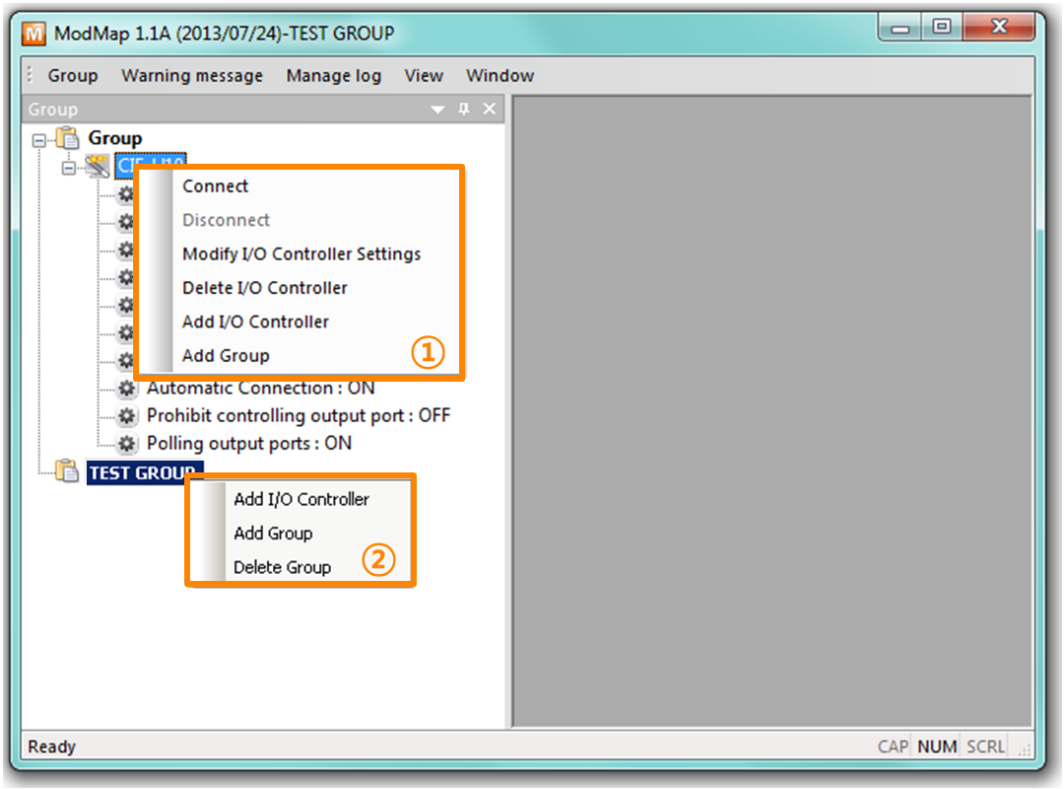


Figure 2-11 Pop-up menu

① When an I/O controller is selected.

② When a group is selected.

- Connect / Disconnect

  You can make or close a TCP/IP connection. Status of the connection is indicated by ICONs. **Please refer to the "Table 2-4 Type of ICONs"**.

- Modify I/O Controller Settings

  You can modify settings of I/O controllers. **Refer to "2.1.3 Manual registration tab" and "2.4 Modification of I/O controllers' settings"**. You can't use this menu when the status of connection is (trying or waiting) or (established).

- Delete I/O Controller

  You can delete an I/O controller.

- Add I/O Controller

  You can add new I/O controllers. Please refer to "2.1 Adding I/O controllers"

- Add Group / Delete Group

  You can add or delete groups. **Please refer to "2.5 Group"**.

☞ **You can't delete the default group.**

2.4 Modification of I/O controllers' settings

2.4.1 How to modify the settings

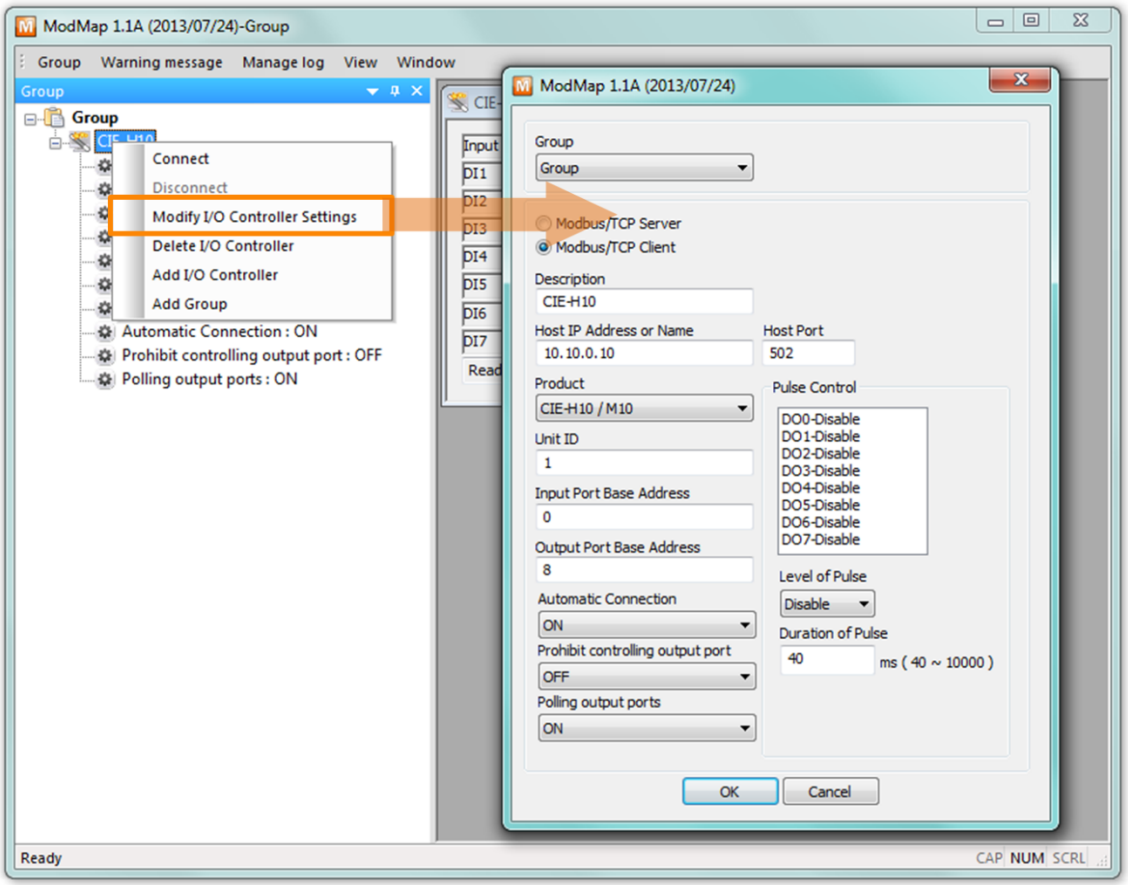
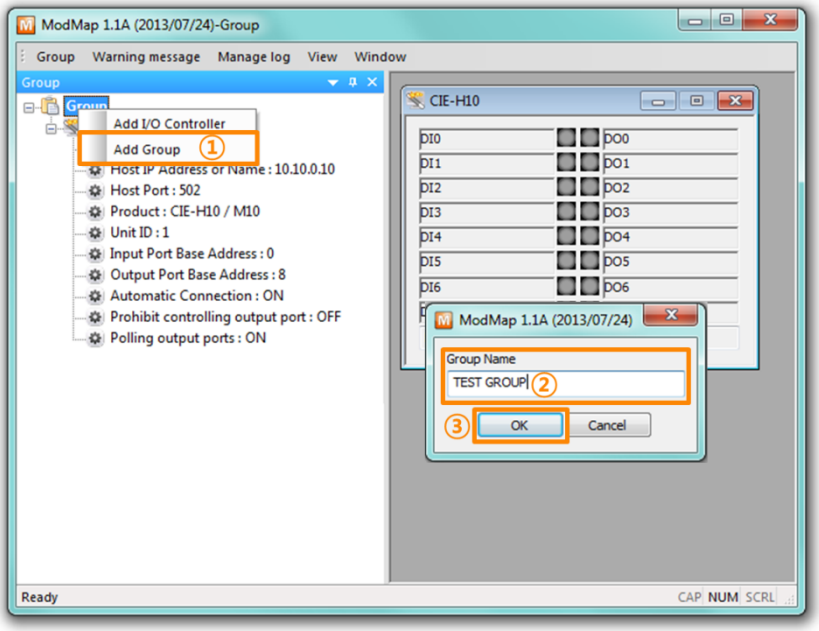


Figure 2-12 How to modify the settings

Select the "Modify I/O Controller Settings" menu then a configuration window appears. Please refer to "**2.1.3 Manual registration tab**" for more detail information about each option.

2.5 Group

2.5.1 Ways of adding groups



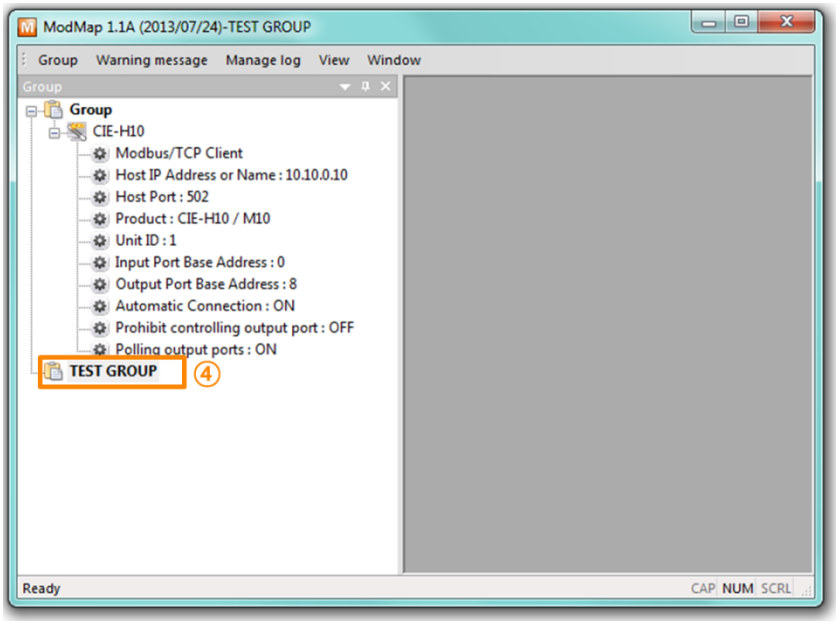


Figure 2-13 Ways of adding groups

① Select the "Add Group" menu then a registration window appears.

② Enter a name for the new group.

③ Click the "OK" button.

④ Check if the group is shown.

2.5.2 Modifying name of groups

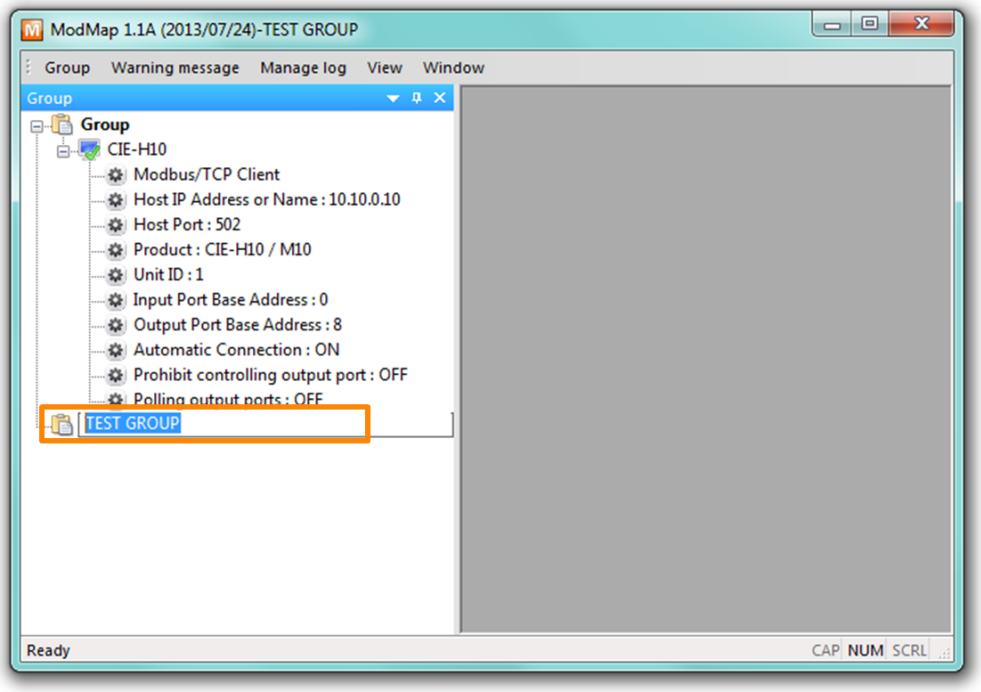


Figure 2-14 Modifying name of Groups

① Select a group which you want to change. Then click the group one more time or press the "F2" key.

② When an edit box appears you can change the name.

2.5.3 Removal of groups

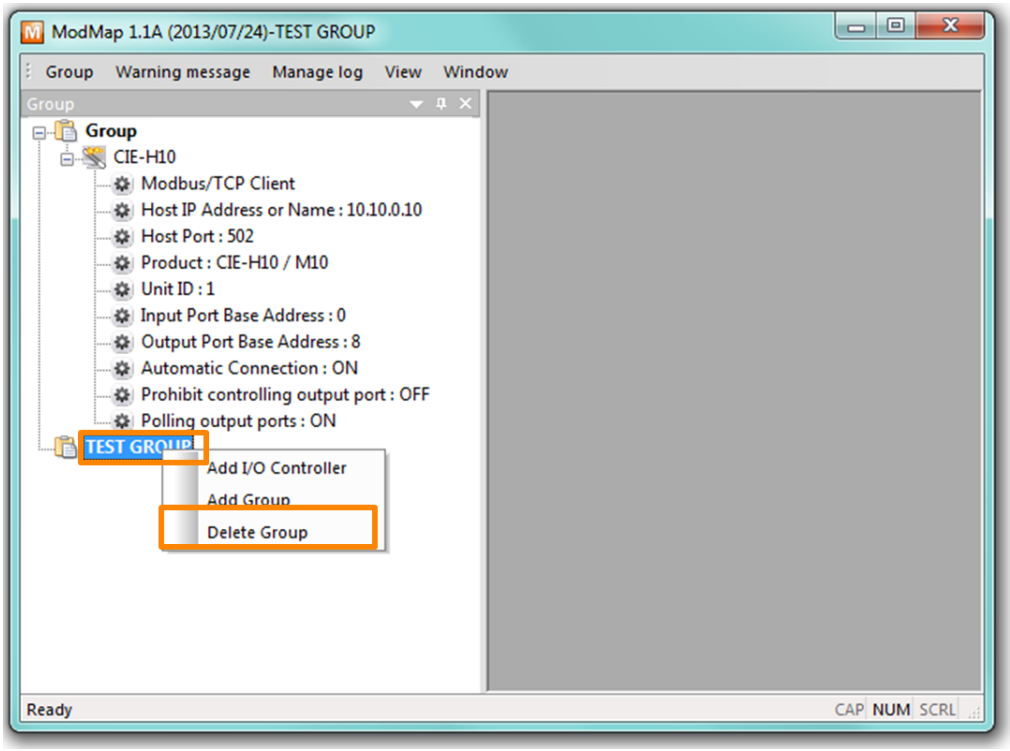


Figure 2-15 Removal of groups

① Select a group which you want to delete.

② Select the "Delete Group" on the pop-up menu.

☞ WARNING :

When you delete a group, all the I/O controllers in the group will be deleted.

2.5.4 Selecting groups

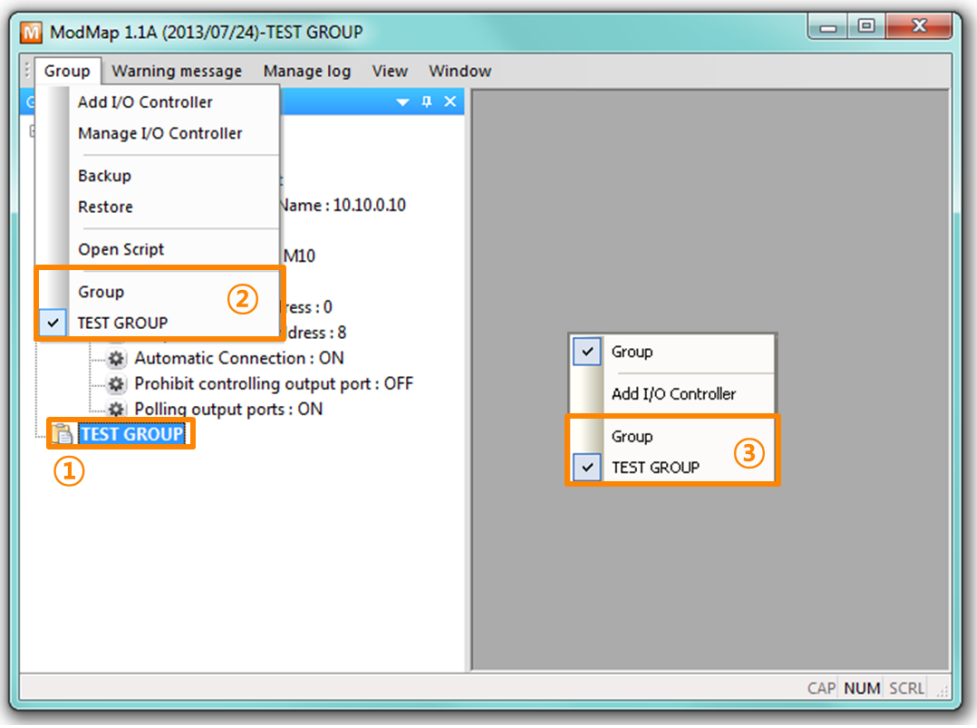


Figure 2-16 Selecting groups

① Select a group in the tree

You can choose one of the groups in the tree.

② Use the "Group" menu

You can choose one of the groups in the "Group" menu.

③ Use the pop-up menu

You can choose one of the groups in the pop-up menu.

☞ If two or more groups are existed then the groups are automatically listed on the "Group" and pop-up menu.

2.6 Management of I/O controllers

2.6.1 How to manage I/O controllers

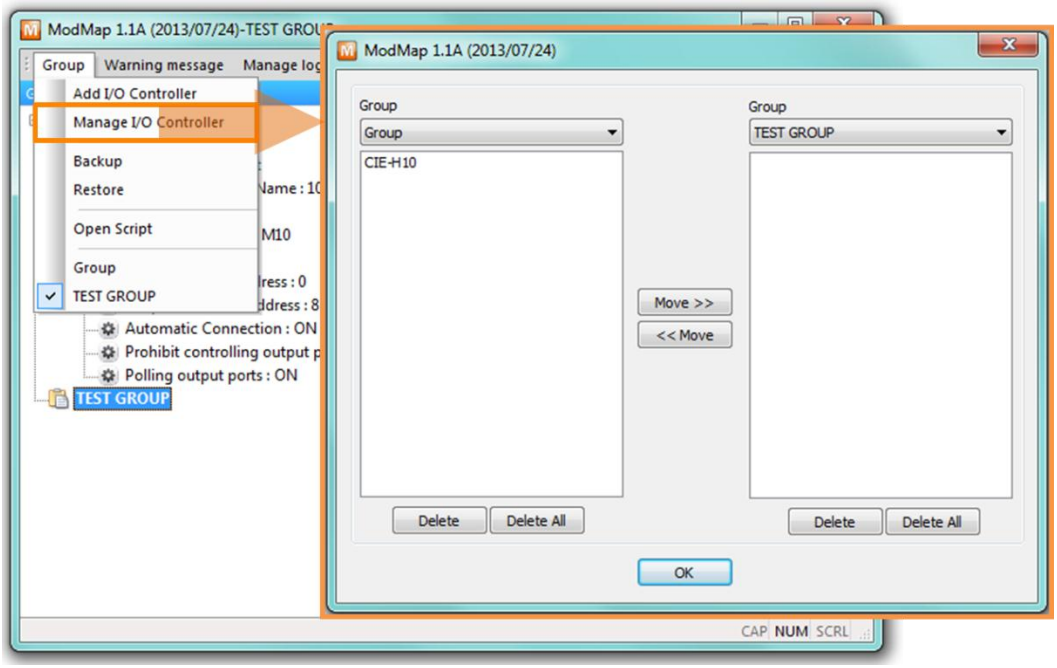


Figure 2-17 How to manage I/O controllers

① You can move I/O controllers to another group.

② You can delete I/O controllers.

- How to move I/O controllers

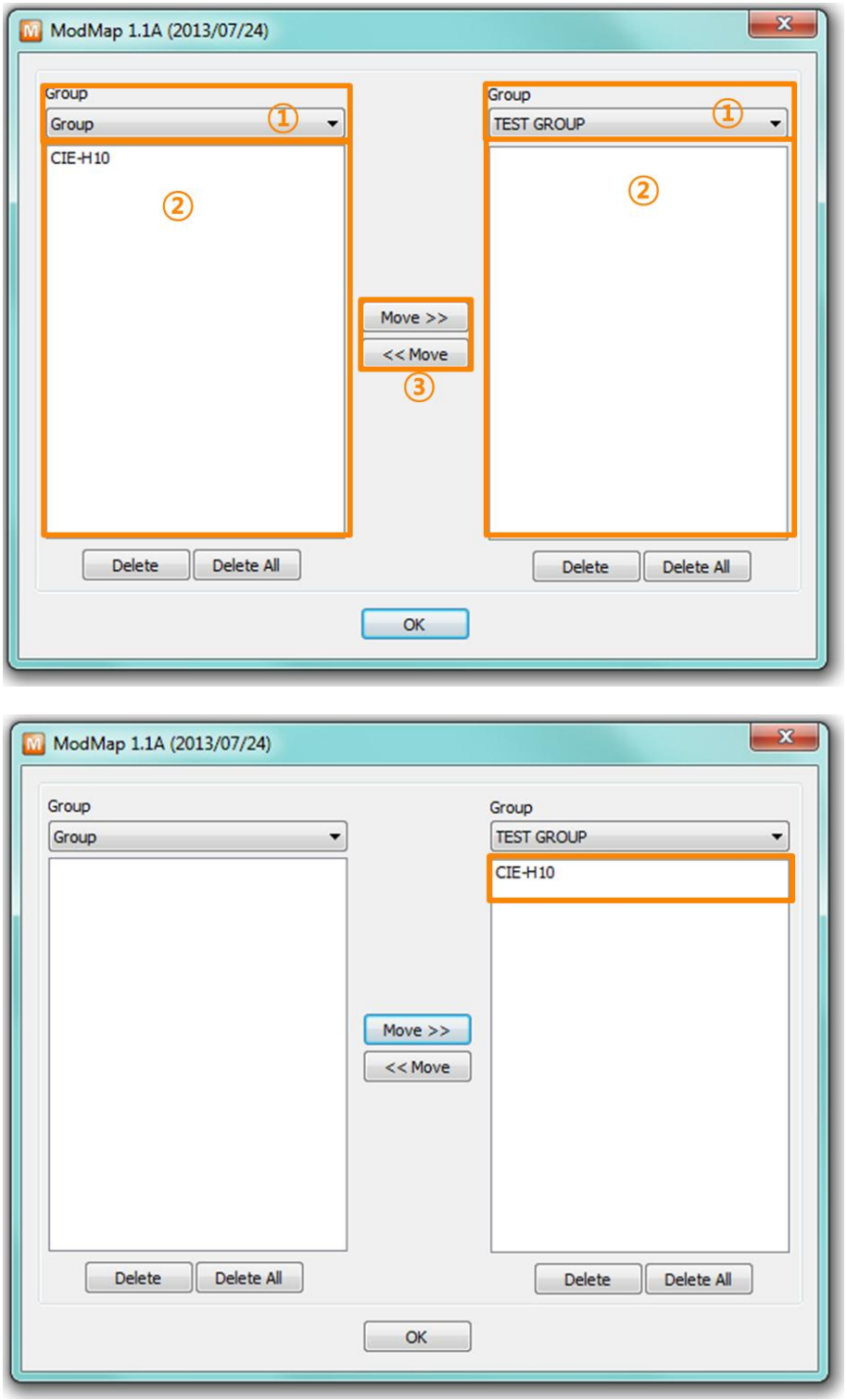


Figure 2-18 How to move I/O controllers

① Select a group.

② Select I/O controllers you want to move.

③ Click the "Move>>" or "<<Move" button.

- How to delete I/O controllers

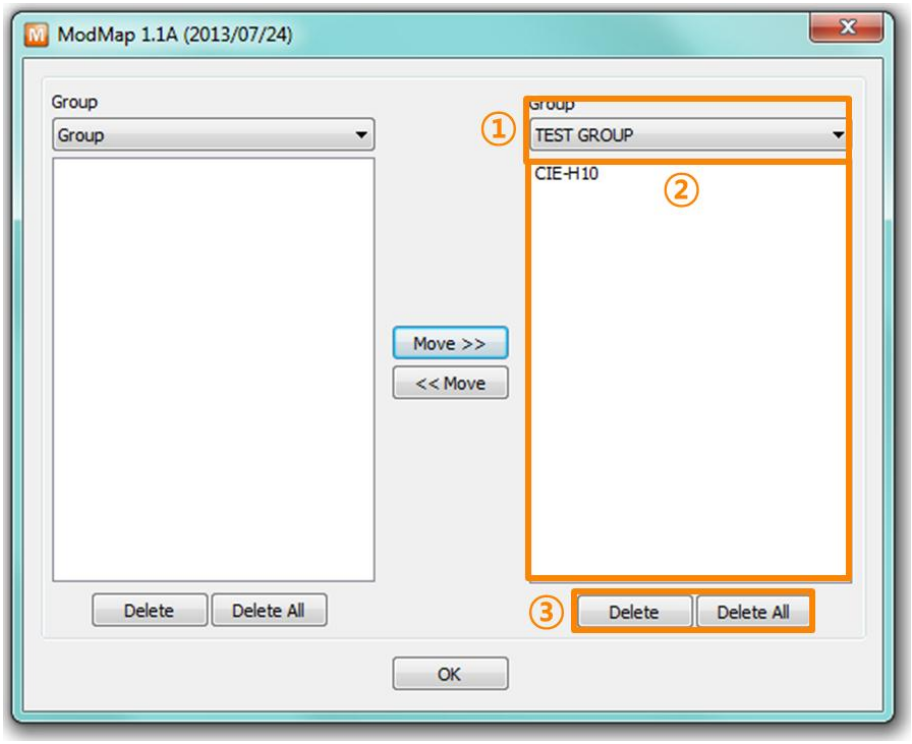


Figure 2-19 How to delete I/O controllers

① Select a group.

② Select I/O controllers you want to delete.

③ Click the "Delete" button.

☞ If you want to delete all I/O controllers in a group then please skip the step② and click the "Delete All" button.

2.7 Backup and restore

2.7.1 Backup and restore

You can back up the current settings about groups and I/O controllers.

- Backup

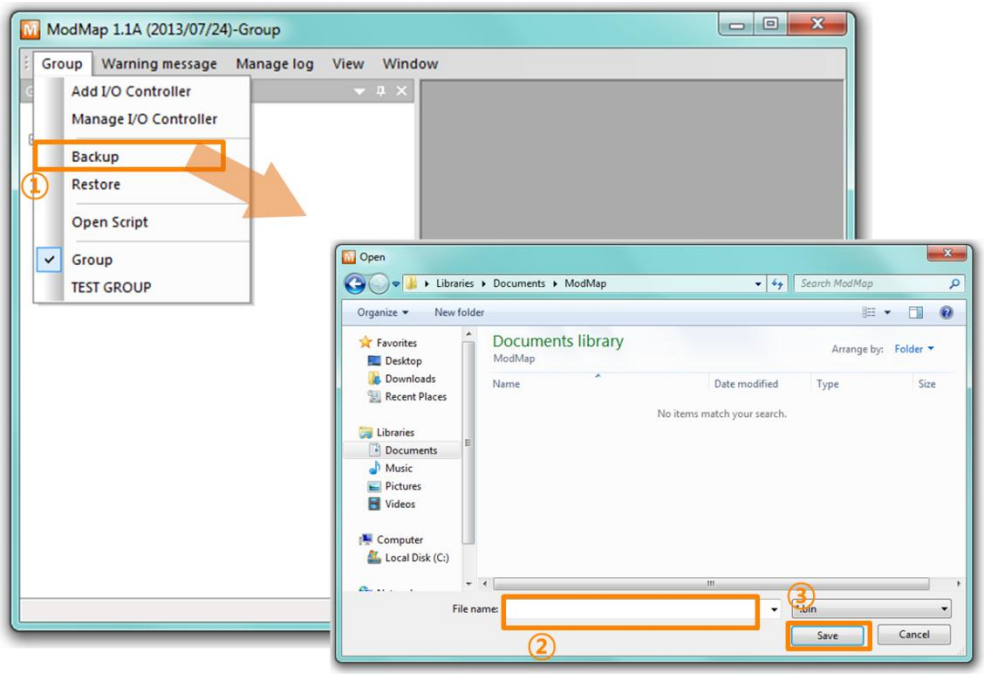


Figure 2-20 Back up settings

① Select the "Backup" menu.

② Enter the file name.

③ Click the "Save" button.

● Restore

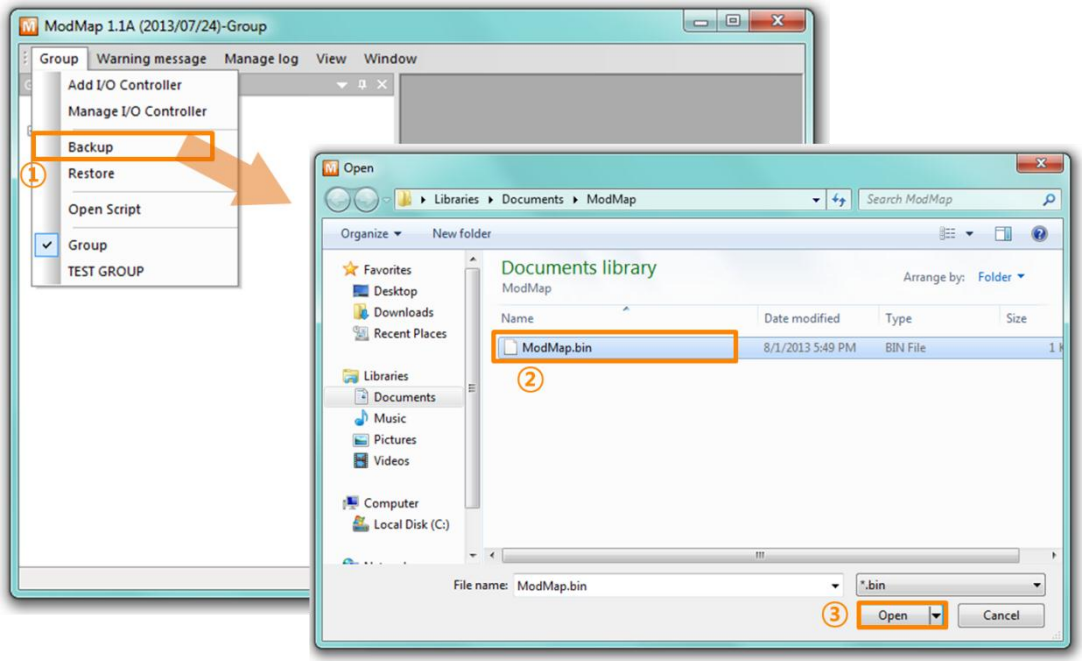


Figure 2-21 Restore (1)

① Select the "Restore" menu.

② Select a backup file.

③ Click the "Open" button.

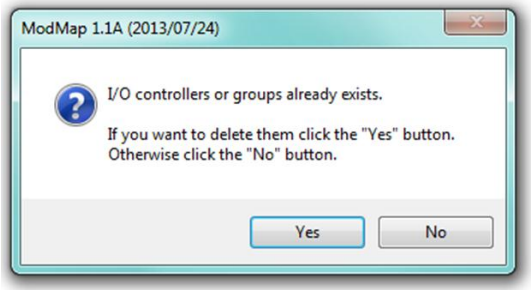

ModMap 1.1A (2013/07/24)
I/O controllers or groups already exists.
If you want to delete them click the "Yes" button.
Otherwise click the "No" button.
Yes
No

Figure 2-22 Restore (2)

④ Confirm the users' choice.

☞ When you click the "Yes" button :

Current settings are removed from the ModMap before restoring a data.

☞ When you click the "No" button :

The backup data will be appended to the existing settings.

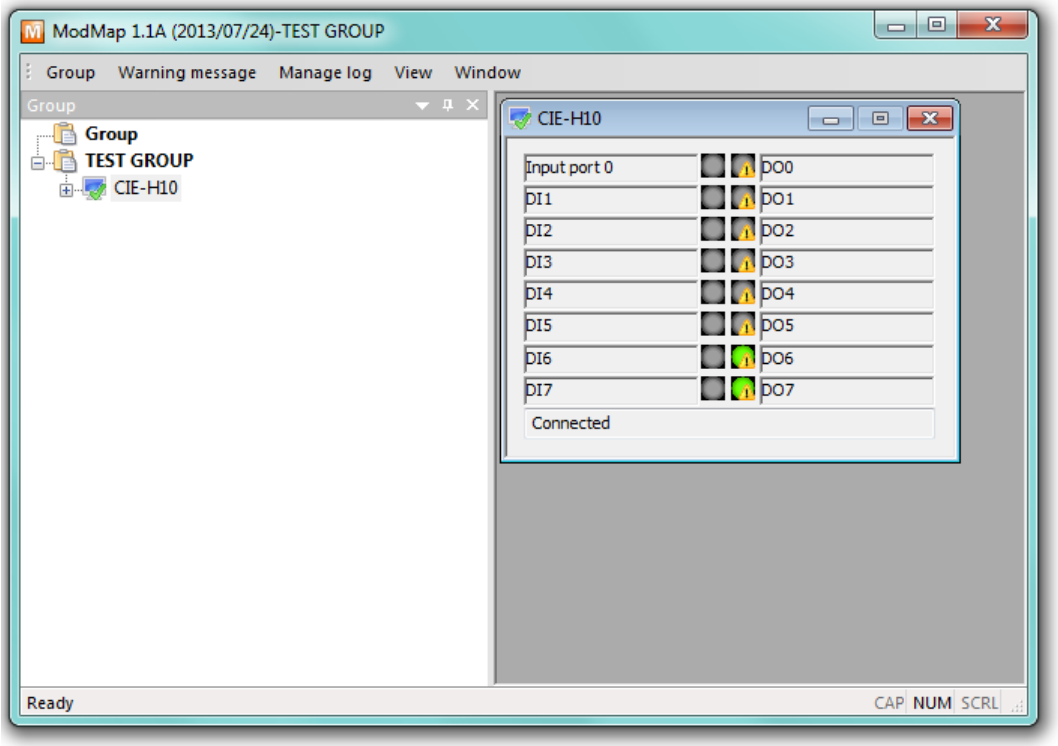


Figure 2-23 When you click the "Yes" button

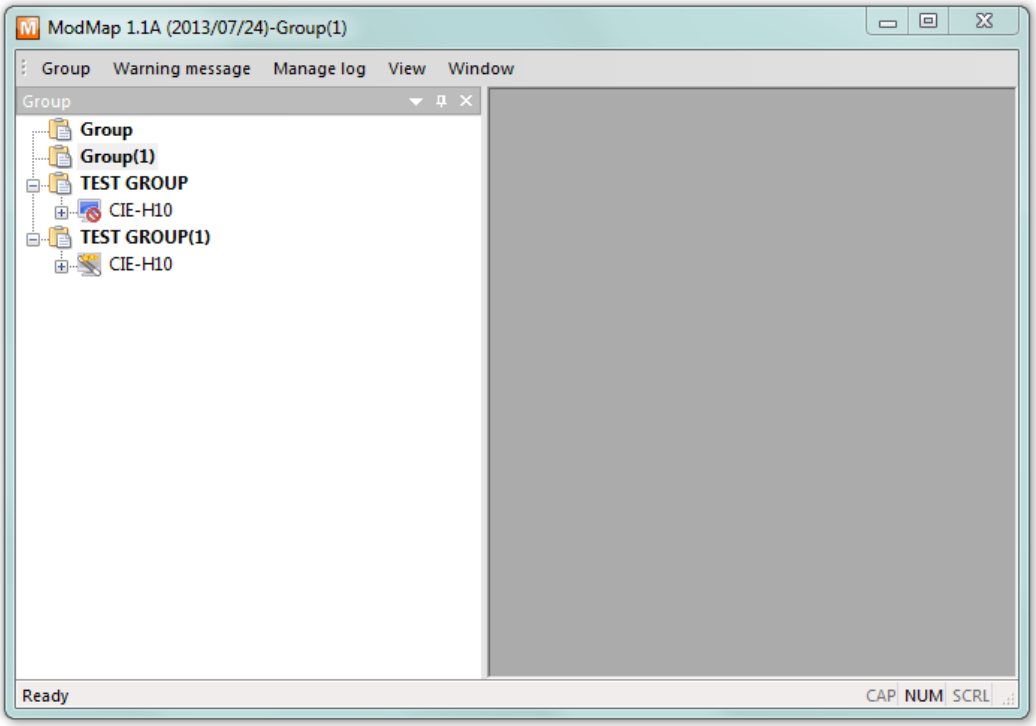


Figure 2-24 When you click the "No" button

2.8 Script

2.8.1 Script

The Script is one of the ways of adding I/O controllers. It must comply with a syntax provided by the ModMap. The ModMap supports INI and CSV file format.

2.8.2 Syntax of script

Properties	Required	Comment
Group	X	Group name of I/O controllers. - If this property is not found then the group for I/O controllers will be automatically assigned by the ModMap. - If the ModMap can't find the group then it adds new group for I/O controllers.
Comment	○	Enter a bried descript about I/O controllers.
Network	○	0 - Modbus/TCP Client 1 - Modbus/TCP Server
HostAddr	○	In case of the "Modbus/TCP Client" : You have to enter this property. It is the host IP address or the host name to make a TCP/IP connection.
HostPort	○	In case of the "Modbus/TCP Client" : This property is the port number to make a TCP/IP connection. In case of the "Modbus/TCP Server" : This property is the port number to wait a request of TCP/IP connection from I/O controllers.
Product	○	Select a type of products what you have. (CIE-H10, CIE-M10, CIE-H12, CIE-H14, EZI-10)
UnitId	○	Enter unit id.
InputAddr	○	Enter input port base address.
OutputAddr	○	Enter output port base address.
AutomaticConnection	X	0 – Set the "Automatic Connection" option to "OFF". 1 – Set the "Automatic Connection" option to "ON".
OuputPortControl	X	0 – Set the "Prohibit controlling output port" option to

		"OFF". 1 – Set the "Prohibit controlling output port" option to "ON".
Polling	X	0 – Set the "Polling output ports" option to "OFF". 1 – Set the "Polling output ports" option to "ON".
DiComment0 ~ 7	X	The brief descriptions for input port number 0 to 7.
DoComment0 ~ 7	X	The brief descriptions for output port number 0 to 7.
UseWarningMSg	X	0 – Set the "Warning message" option to "OFF". 1 – Set the "Warning message" option to "ON"
WarningMsgType	X	0 – Same warning message will be used to all output ports. 1 – Each output port has its own warning message.
UseWarningMsgDo0 ~ 7	X	Set the "Warning message" option to each output port. 0 – Set the "Warning message" option to "OFF". 1 – Set the "Warning message" option to "ON"
MsgAllOn	X	*When the "WarningMsgType" is zero(0):* This message is showing before changing output ports status to "ON".
MsgAllOff	X	*When the "WarningMsgType" is zero(0):* This message is showing before changing output ports status to "OFF".
DoMsgOn0 ~ 7	X	*When the "WarningMsgType" is one(1) and the "UseWarningMsgDo0 ~ 7" is one(1) :* This message is showing before changing output ports status to "ON".
DoMsgOff0 ~ 7	X	This message is showing before changing output ports status to "OFF".

Table 2-6 Properties

- INI file format
  - ☞ Properties

    The basic element contained in an INI file. Every property has a name and value, delimited by an equal sign(=).

    The name appears to the left of the equals sign.
  - ☞ Sections

    Properties may be grouped into arbitrarily named sections. The section name appears on a line by itself, in square brackets([and]).

    The '[CONTROLLER]' is used for a section name.
  - ☞ Properties or sections have to end with <CR><LF>.
  - ☞ You have to use all required properties.

```
[CONTROLLER]
Group=Group #1
Comment=I/O controller #3
Network=0
HostAddr=10.1.0.1
HostPort=502
Product=CIE-H10
UnitId=1
InputAddr=0
OutputAddr=8
AutomaticConnection=1
OutputPortControl=1
Polling=1
DiComment0=DI0
DiComment1=DI1
DiComment2=DI2
DiComment3=DI3
DiComment4=DI4
DiComment5=DI5
DiComment6=DI6
DiComment7=DI7
DoComment0=DO0
DoComment1=DO1
DoComment2=DO2
DoComment3=DO3
DoComment4=DO4
DoComment5=DO5
DoComment6=DO6
DoComment7=DO7
UseWarningMsg=1
WarningMsgType=1
UseWarningMsgDo0=1
UseWarningMSgDo7=1
DoMsgOn0=Are you sure to change the status of output #0 to ON?
DoMsgOff7= Are you sure to change the status of output #7 to OFF?
```

Table 2-7 A example of INI file

- CSV file format

  ☞ CSV is a delimited data format that has fields separated by the comma character(,) and record separated by newlines(<CR><LF>).

  ☞ **Fields can't have the comma character(,).**

  ☞ The first record in a csv file contain column names in each of the fields. The column names should be one of the properties names of INI file.

```
Comment,Network,HostAddr,HostPort,Product,UnitId,InputAddr,OutputAddr
I/O controller #1,0,10.1.0.1,502,CIE-H10,1,0,8
I/O controller #2,0,10.1.0.2,502,CIE-H10,1,0,8
I/O controller #3,0,10.1.0.3,502,CIE-M10,1,0,8
I/O controller #4,0,10.1.0.4,502,CIE-M10,1,0,8
I/O controller #5,0,10.1.0.5,502,CIE-H12,1,0,8
I/O controller #6,0,10.1.0.6,502,CIE-H12,1,0,8
I/O controller #7,0,10.1.0.7,502,EZI-10,1,0,8
I/O controller #8,0,10.1.0.8,502,EZI-10,1,0,8
I/O controller #9,0,10.1.0.9,502,EZI-10,1,0,8
I/O controller #10,0,10.1.0.10,502,EZI-10,1,0,8
```

Table 2-8 A example of csv file

2.8.3 Open script

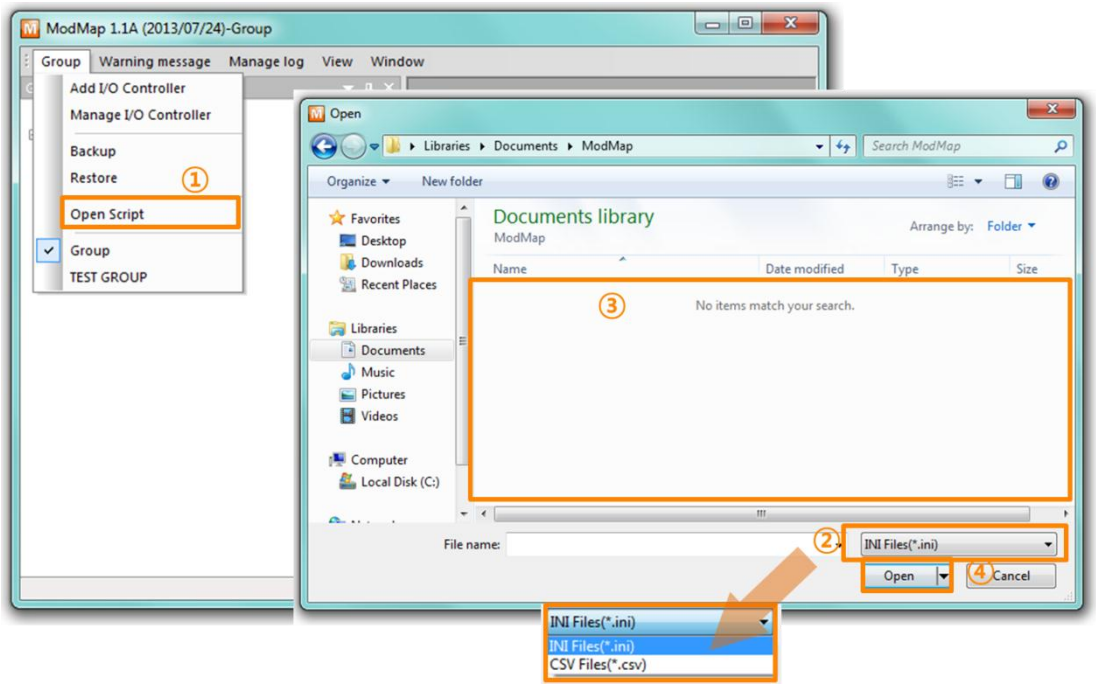


Figure 2-25 Open script

① Select the "Open Script" menu.

② Select the "INI Files(*.ini)" or "CSV Files(*.csv)".

③ Select a script file.

④ Select the "Open" button then the MadMap start to add I/O controllers .

2.9 Warning message

2.9.1 Warning message

If "Warning message" option is ON, a warning message is showing before changing output ports status. With this function, you can prevent unwanted changing of output ports status.

- How to set the "Warning message" option

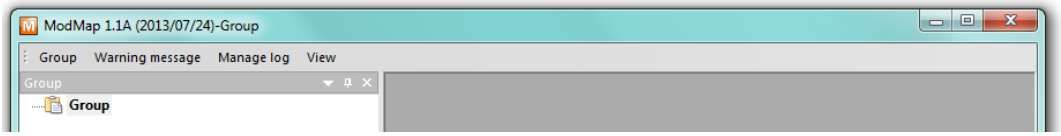


Figure 2-26 How to set the "Warning message" option (1)

① Select the "Warning message" menu.

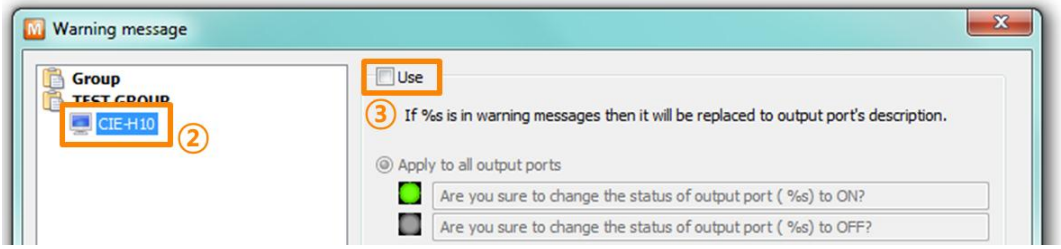

Warning message
Group
CIE-H10
2
Use
3
If %s is in warning messages then it will be replaced to output port's description.
Apply to all output ports
Are you sure to change the status of output port (%s) to ON?
Are you sure to change the status of output port (%s) to OFF?

Figure 2-27 How to set the "Warning message" option (2)

② Select an I/O controller to use the "Warning message" option in the tree.

③ Check the "Use" checkbox.

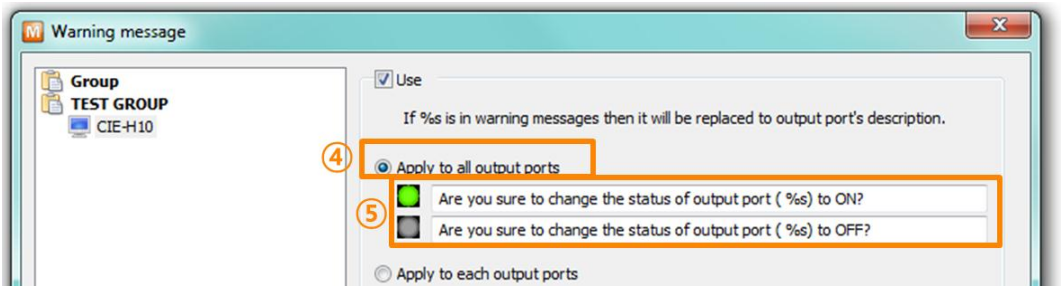

Warning message
Group
TEST GROUP
CIE-H10
Use
If %s is in warning messages then it will be replaced to output port's description.
4
Apply to all output ports
5
Are you sure to change the status of output port (%s) to ON?
Are you sure to change the status of output port (%s) to OFF?
Apply to each output ports

Figure 2-28 How to set the "Warning message" option (3)

④ In case of the "Apply to all output ports".
Same warning message will be used to all output ports.

⑤ Enter warning messages.

☞ Default values are "Are you sure to change the status of output port (%s) to ON?" and "Are you sure to change the status of output port (%s) to OFF?".

☞ If %s is in warning messages then it will be replaced to output port's description.

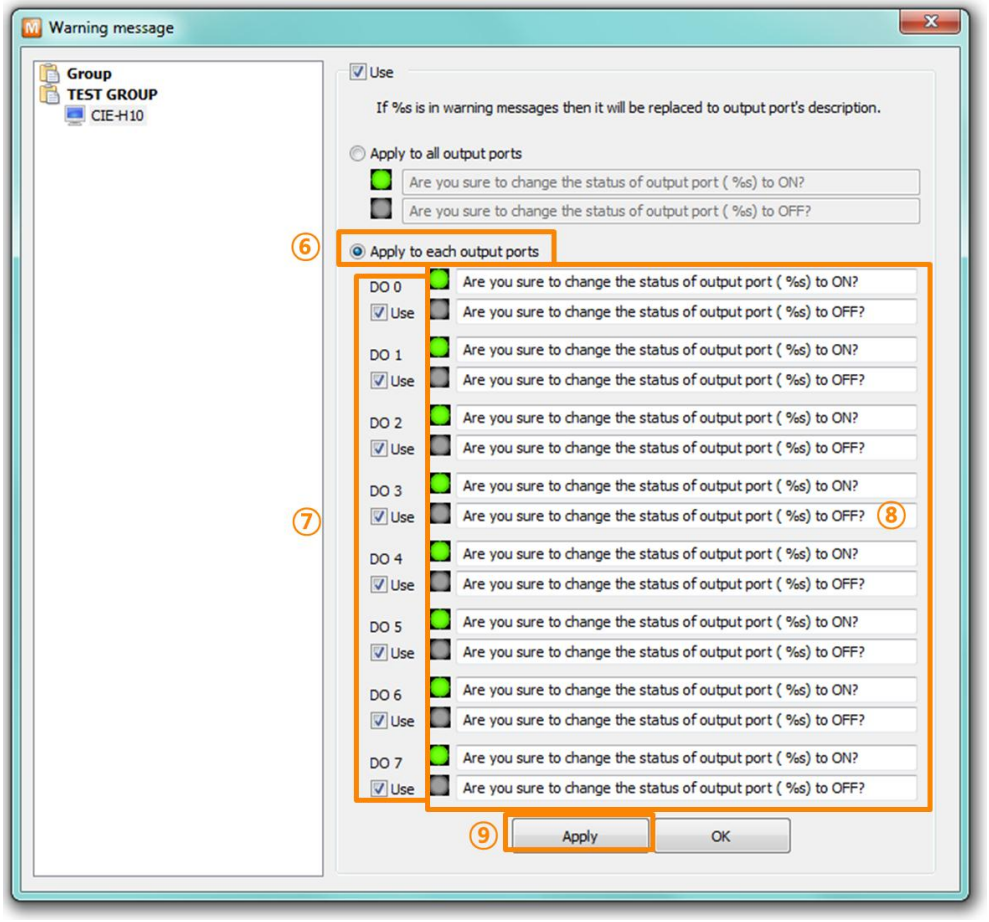

Warning message
Group
TEST GROUP
CIE-H10
Use
If %s is in warning messages then it will be replaced to output port's description.
Apply to all output ports
Are you sure to change the status of output port (%s) to ON?
Are you sure to change the status of output port (%s) to OFF?
⑥
Apply to each output ports
DO 0
DO 1
DO 2
DO 3
DO 4
DO 5
DO 6
DO 7
Use
Are you sure to change the status of output port (%s) to ON?
Are you sure to change the status of output port (%s) to OFF?
⑦
⑧
⑨
Apply
OK

Figure 2-29 How to set the "Warning message" option (4)

⑥ In case of the "Apply to each output ports"

Each output port has its own warning message.

⑦ Select the "Use" checkbox for one of output ports.

⑧ Enter warning messages.

☞ Default values are "Are you sure to change the status of output port (%s) to ON?" and "Are you sure to change the status of output port (%s) to OFF?".

☞ If %s is in warning messages then it will be replaced to output port's description.

⑨ Click the "Apply" button.

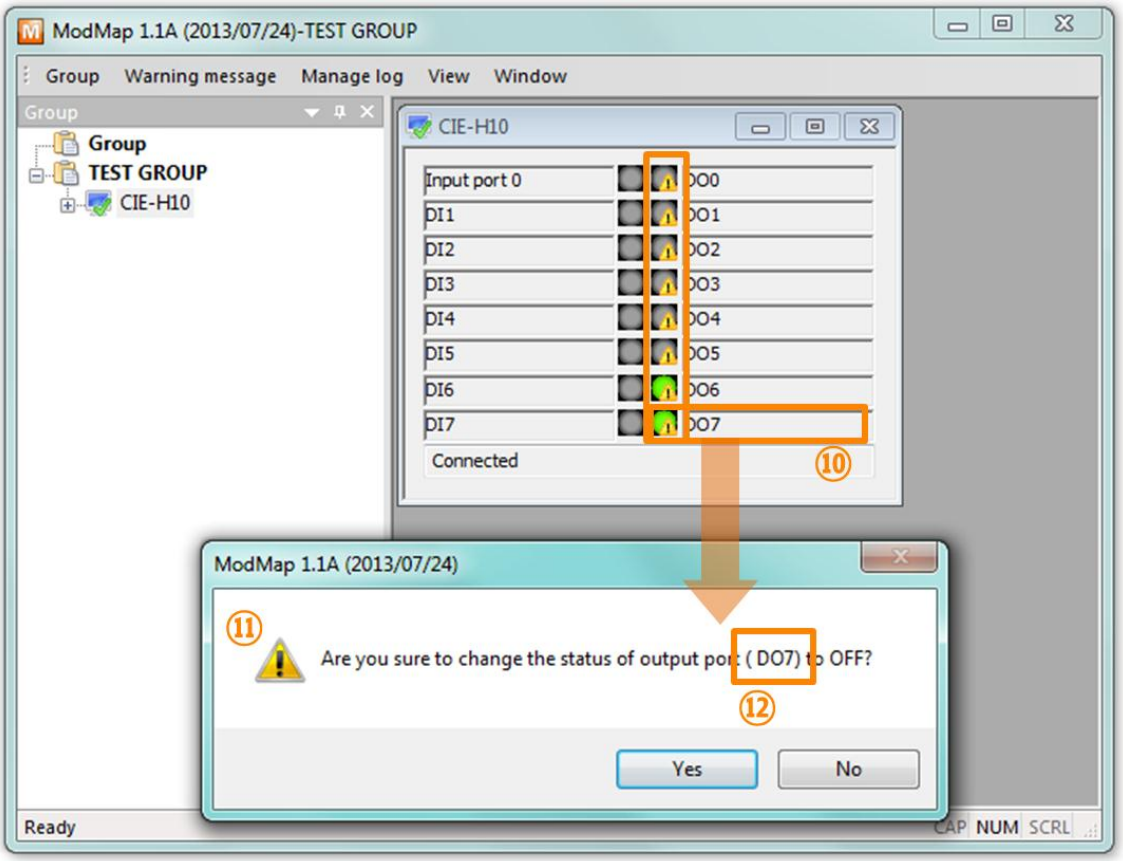


Figure 2-30 How to set the "Warning message" option (5)

⑩ The icons of outpur ports is changing when the "Warning message" option is ON.

⑪ A warning message is showing before changing output ports status.

⑫ If %s is in warning messages then it will be replaced to output port's description.

2.10 Manage Log

2.10.1 How to manage log

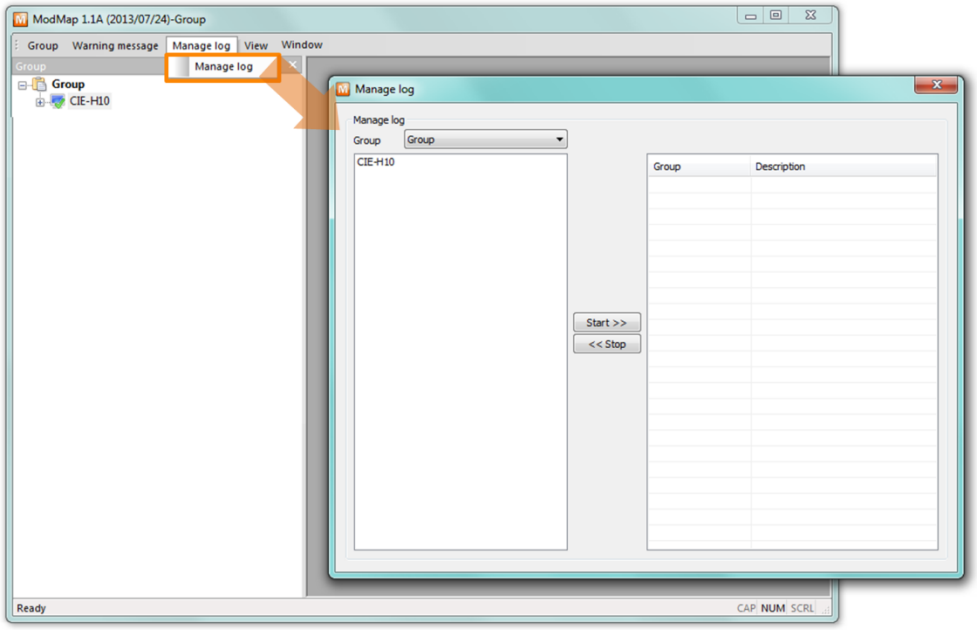


Figure 2-31 How to manage log(1)

① Select the "Manage Log"

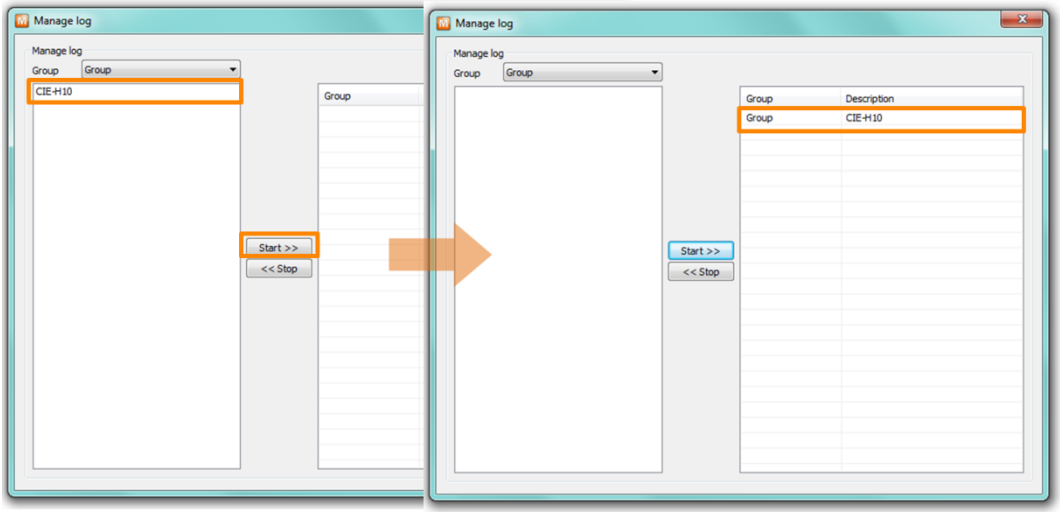


Figure 2-32 How to manage log(2)

② If you select I/O controller and click the "start" button, the log file will be made.

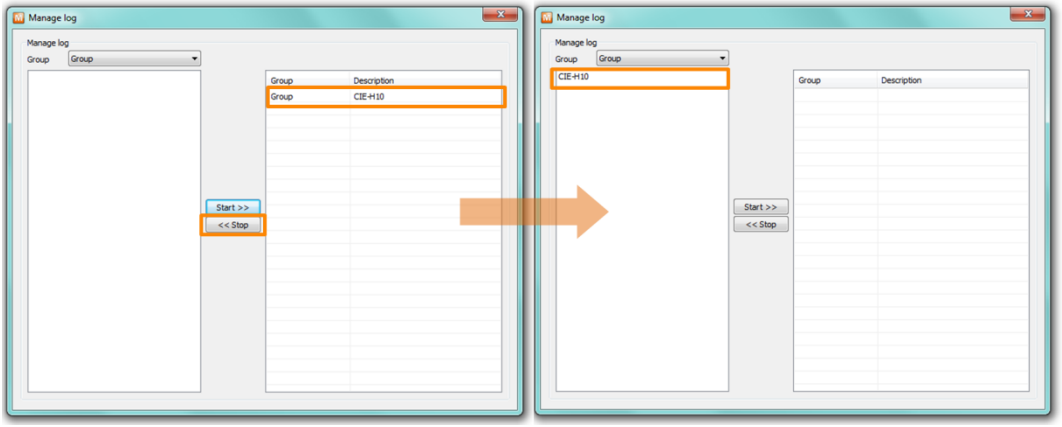


Figure 2-33 How to stop the log

③ If you want to stop the log, select the I/O controller and click the "stop" button.

2.11 Log file

2.11.1 Location of log file

The log files created will be saved in [Document]-[ModMap]

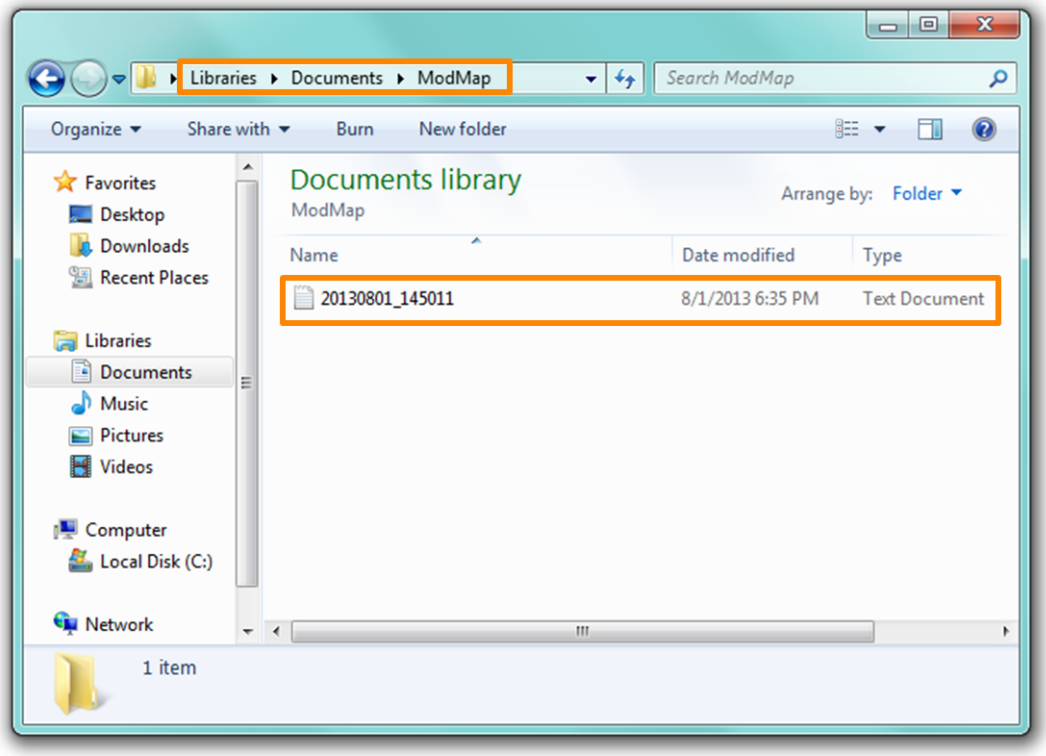


Figure 2-34 location of log file

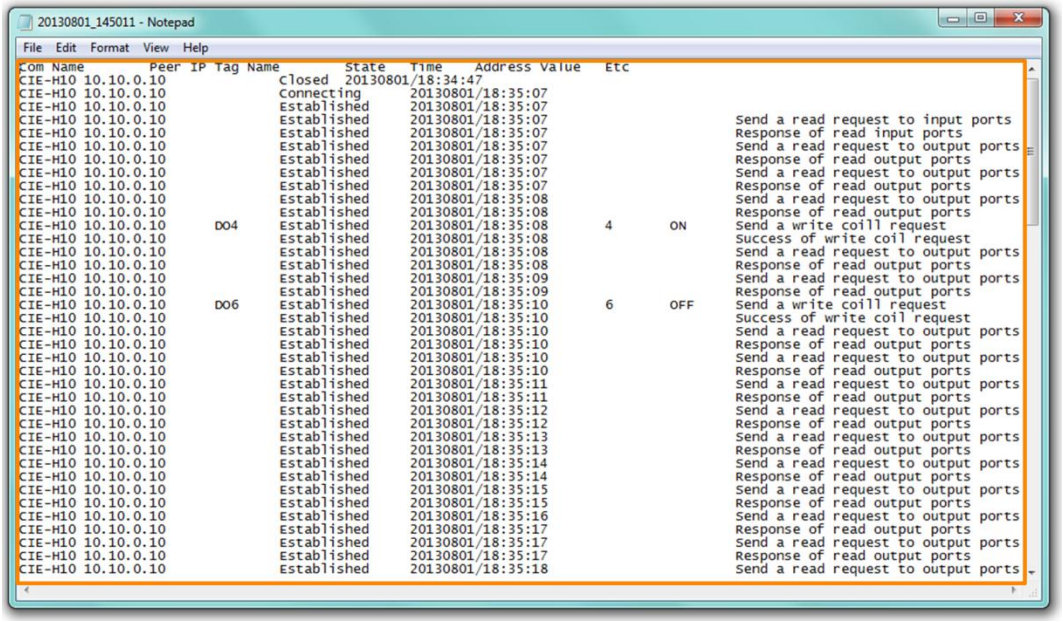


Figure 2-35 log file

Each log files will be created to data_time. If the I/O controller status or port status are change, it will be updated.

3 History

Date	Ver.	Comments	Author
2010.10.15	1.0	○ Created	Jack Kim
2010.11.03	1.1	○ [Script] function has been added.	Jack Kim
2010.12.24	1.2	○ [Warning message] function has been added.	Jack Kim
2011.08.17	1.4	○ Contents about the script has been changed ○ Screen shots have been updated	Roy LEE
2013.07.30	1.5	○ [Log] function has been added ○ Screen shots have been updated	Lisa Shin